1. A content processing unit for protecting interchip content pathways transporting digital content objects, the content processing unit comprising:

 a first chip package, wherein the first chip package comprises:

  a first body,

  a first plurality of interconnects,

  an encryption engine, and

  a first key storage register capable of storing a first key,

 wherein:

   the first key is used by the encryption engine to produce ciphertext content,

   the first key storage register is non-readable from outside the first body, and

   the first key storage register cannot be overwritten after a programmability period;

 a second chip package, wherein the second chip package comprises:

  a second body,

  a second plurality of interconnects,

  a decryption engine, and

  a second key storage register capable of storing a second key,

 wherein:

   the second key is used by the decryption engine to produce plaintext content from the ciphertext content, and

   the second key storage register is non-readable from outside the second body;

 a content pathway coupling a first subset of the first plurality and a second subset of the second plurality, wherein the content pathway transports the digital content objects as the ciphertext content.

2. The content processing unit for protecting interchip content pathways transporting digital content objects as recited in claim 1, wherein the programmability period ends when a command is sent to the first plurality.

1   3.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 2, wherein the command activates a
3 fusable link.

1   4.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 1, wherein the programmability period
3 ends after writing to the first key storage register.

1   5.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 1, wherein:
3   the content processing unit is a set top box, and
4   the first chip package is a conditional access chip.

1   6.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 1, wherein at least one of the first and
3 second chip packages comprises a plurality of semiconductor substrates.

1   7.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 1, wherein:
3   at least one of the first and second chip packages further comprises a key
4 encryption key, and
5   at least one of the first and second keys is protected with the key encryption
6 key outside the first body.

1   8.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 1, wherein the second key storage
3 register is overwritable by manipulating the second plurality.

1   9.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 1, wherein:
3   the second chip package further comprises a second encryption engine, and
4   the second encryption engine uses the second key or another key that is a
5 function of the second key to encrypt the content object or a derivative thereof.

1   10.   The content processing unit for protecting interchip content pathways
2 transporting digital content objects as recited in claim 9, further comprising a third chip

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3   package comprising a third key that can decrypt ciphertext produced with the second

4   encryption engine.

1   11.   The content processing unit for protecting interchip content pathways

2   transporting digital content objects as recited in claim 1, wherein:

3   the content processing unit is part of a larger system comprising a third

4   plurality of functionally equivalent content processing units, and

5   each of the third plurality uses a different first key to protect their respective

6   content pathways.

1   12.   The content processing unit for protecting interchip content pathways

2   transporting digital content objects as recited in claim 1, wherein the digital content objects

3   are either compressed or non-compressed.

1   13.   A method for protecting interchip content pathways transporting digital

2   content objects within a content processing unit, the method comprising steps of:

3   loading a first key into a first key storage register in a first chip package,

4   wherein the first key in the first key storage register is non-readable from outside the first

5   chip package;

6   activating a feature of the first chip package that prevents overwriting the first

7   key in the first key storage register from outside the first chip package;

8   encrypting digital content with the first key to produce ciphertext content;

9   coupling the ciphertext content from the first chip package to a content

10   pathway;

11   loading a second key into a second key storage register in a second chip

12   package, wherein the second key in the second key storage register is non-readable from

13   outside the second chip package;

14   coupling the ciphertext content from the content pathway to a second chip

15   package; and

16   decrypting the ciphertext content with the second key to reformulate the

17   digital content.

1   14.   The method for protecting interchip content pathways transporting

2   digital content objects within the content processing unit as recited in claim 13, further

3   comprising steps of:

4   providing a key encryption key in the at least one of the first and second chip

5   packages; and

6   decrypting at least one of the first and second keys with the key encryption

7   key, whereby the at least one of the first and second keys is protected with the key encryption

8   key outside the first chip package.

1   15.   The method for protecting interchip content pathways transporting

2   digital content objects within the content processing unit as recited in claim 13, further

3   comprising a step of overwriting the second key in the second key storage register from

4   outside the second chip package.

1   16.   The method for protecting interchip content pathways transporting

2   digital content objects within the content processing unit as recited in claim 13, further

3   comprising steps of:

4   encrypting the digital content or a derivative thereof in the second chip

5   package to produce second ciphertext content using the second key or another key that is a

6   function of the second key,

7   coupling the second ciphertext content to a second content pathway.

1   17.   The method for protecting interchip content pathways transporting

2   digital content objects within the content processing unit as recited in claim 16, further

3   comprising steps of:

4   coupling the second ciphertext content from the second content pathway to a

5   third chip package; and

6   decrypting the second ciphertext content with the third key to reformulate the

7   digital content.

1   18.   The method for protecting interchip content pathways transporting

2   digital content objects within the content processing unit as recited in claim 13, wherein:

3   the content processing unit is part of a larger system comprising a plurality of

4   functionally equivalent content processing units, and

5   each of the plurality uses a different first key to protect their respective content

6   pathways.

1   19.   The method for protecting interchip content pathways transporting
2   digital content objects within the content processing unit as recited in claim 13, further
3   comprising steps of:
4   replacing at least one of the first and second chip packages;
5   querying a database for at least one of the first and second keys; and
6   loading at least one first and second keys into its respective chip package.

1   20.   The method for protecting interchip content pathways transporting
2   digital content objects within the content processing unit as recited in claim 13, further
3   comprising steps of:
4   replacing at least one of the first and second chip packages; and
5   activating a secure re-start feature to load at least one of the first and second
6   keys into its respective chip package from another chip package.

1   21.   A computer system adapted to perform the computer-implementable
2   method for protecting interchip content pathways transporting digital content objects within
3   the content processing unit of claim 13.

1   22.   A computer-readable medium having computer-executable instructions
2   for performing the computer-implementable method for protecting interchip content
3   pathways transporting digital content objects within the content processing unit of claim 13.

1   23.   A content processing unit for protecting interchip content pathways
2   transporting digital content objects, the content processing unit comprising:
3   a first chip package, wherein the first chip package comprises:
4   a first body,
5   a first plurality of interconnects,
6   an encryption engine, and
7   a first key storage register capable of storing a first key,
8   wherein:
9   the first key is used by the encryption engine to
10   produce ciphertext content,
11   the first key storage register is non-readable
12   from the first plurality of interconnects, and

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13   the first key storage register cannot be

14   overwritten after being written once;

15   a second chip package, wherein the second chip package comprises:

16   a second body,

17   a second plurality of interconnects,

18   a decryption engine, and

19   a second key storage register capable of storing a second key,

20   wherein:

21   the second key is used by the decryption engine

22   to produce plaintext content from the ciphertext content, and

23   the second key storage register is non-readable

24   from the second plurality of interconnects;

25   a content pathway coupling a first subset of the first plurality and a second

26 subset of the second plurality, wherein the content pathway transports the digital content

27 objects as the ciphertext content.

1   24. The content processing unit for protecting interchip content pathways

2 transporting digital content objects as recited in claim 23, wherein:

3   the first key storage register has a third plurality of bits, and

4   each of the third plurality can only change its stored value, at most, one time.

1   25. The content processing unit for protecting interchip content pathways

2 transporting digital content objects as recited in claim 23, wherein:

3   at least one of the first and second chip packages further comprises a key

4 encryption key, and

5   at least one of the first and second keys is protected with the key encryption

6 key outside the first body.

1   26. The content processing unit for protecting interchip content pathways

2 transporting digital content objects as recited in claim 23, wherein the second key storage

3 register is overwritable from outside the second chip package.

1   27. The content processing unit for protecting interchip content pathways

2 transporting digital content objects as recited in claim 23, wherein:

3   the second chip package further comprises a second encryption engine, and

4   the second encryption engine uses the second key or another key that is a

5   function of the second key to encrypt the content object or a derivative thereof.

1   28.   The content processing unit for protecting interchip content pathways

2   transporting digital content objects as recited in claim 27, further comprising a third chip

3   package comprising a third key that can decrypt ciphertext produced with the second

4   encryption engine.

1   29.   The content processing unit for protecting interchip content pathways

2   transporting digital content objects as recited in claim 23, wherein:

3   the content processing unit is part of a larger system comprising a third

4   plurality of functionally equivalent content processing units, and

5   each of the third plurality uses a different first key to protect their respective

6   content pathways.